

REMARKS

The foregoing amendment is being submitted in order to more particularly point out what Applicants regard as their invention and to overcome the Examiner's rejections using WO 97/28883 and Malcolm U.S. Patent No. 4,541,844 as primary references. Specifically, it is proposed to amend claim 1 to incorporate the subject matter of claims 5 and 15.

Change of Address

The Office Action herein responded to refers to a change of address received on 29 November 2002. Applicants' attorney has not filed any change of address. If a change of address notice was sent to the International Bureau and transmitted to the PTO, it is requested that the Examiner furnish the undersigned a copy thereof.

Rejection over PCT Publication WO 97/28883

The Examiner is maintaining her rejection of claims 1-7, 15 and 16 as obvious over WO 97/28883 ("WO '883") for reasons set forth in the September 2002 Office Action. In their December 2002 response, Applicants amended claims 1 and 5 and argued against the rejection. The Examiner has addressed these arguments as follows:

Applicant argues that instant invention does not involve the precipitation of airborne particles as taught in WO 97/28883. It is argued that instant invention is directed to reducing the inhalation of particles and the method involves imparting an electrostatic charge on the liquid particles during the process of spraying the droplets. It is argued that the charged droplets will disperse as a result of mutual repulsion and move toward surfaces of opposite or neutral surfaces.

Applicant's arguments have been fully considered but they are not persuasive. The examiner points out that WO teaches imparting instant charge (+/- .0001 C/Kg) to liquid droplets with instant particle size and droplet diameter via the process of spraying thorough an aerosol device. WO teaches the theory of mutual repulsion on page 1, lines 29-30 as seen in instant method. Therefore, it is the examiner's position that WO's invention will inherently perform instant invention since both the prior art and the instant invention impart the same droplets, the same charge, and same particle size/diameter. Further, the examiner points out that the "method of reducing the inhalation of airborne particles" is the preamble and is not given patentable weight. Therefore the step given

weight is "method comprises imparting a unipolar charge on liquid droplets . . .", which is disclosed by WO.

Reconsideration of this rejection is requested in view of the foregoing amendment.

WO '883 is concerned with precipitation of airborne particles in an indoor space by a process of contacting the particles with electrostatically charged liquid droplets having a unipolar charge with a charge to mass ratio of at least $\pm 1 \times 10^{-4}$ C/Kg. The unipolar charge is transferred to the airborne particles and, owing to mutual repulsion and gravity, the airborne particles are caused to precipitate. The claims of the instant application are concerned with droplets coming out of an aerosol sprayer, not particles that may be present in ambient indoor air. All that Applicants' claims have in common with WO '883 is that the liquid droplets happen to be charged to the same charge to mass ratio.

In responding to Applicants' previous arguments, the Examiner says that the preamble of Applicants' claims is a "method of reducing the inhalation of airborne particles" and that this preamble should not be given patentable weight. This is not correct. The preamble is "A method of reducing the inhalation of airborne respirable particles or droplets having a diameter of less than 10 micrometers that are produced by spraying liquid droplets from an aerosol spray device . . .". (Applicants are proposing to limit the device to an aerosol spray device, in order to assist in differentiating their claimed method from the methods disclosed Malcolm U.S. Patent No. 4,541,844 and Inculet U.S. Patent No. 5,400,975. This change is not relevant as far as the rejection over WO '883 is concerned.

The Examiner's response raises the issue of what weight should be accorded to the preamble of a claim. Stated differently, we have an issue of whether this preamble is a limitation that can be relied upon to distinguish over the prior art, or whether it is merely a statement of intended use. The current state of the law is summed up by Professor Chisum as follows:

If the preamble is a limitation, it defines the scope of the claimed subject matter. It can be relied on to distinguish the claim from the prior art. It can be relied on to avoid infringement.

With Jepson-style improvement claims, it is clear that the preamble is a limitation. With other types of preambles however, the answer is not so clear and the decisions are difficult to reconcile. In general, it seems that a preamble will be considered a limitation if the claim cannot be read independently of the preamble and the preamble must be read to give meaning to the claim or is essential to point out the invention. On the other hand, a preamble will not be considered a limitation if the preamble merely states a purpose or intended use and the remainder of the claim completely defines the invention.

3 Chisum, Patents § 8.06 [1][d] (March 2002). A copy is enclosed as Attachment A.

The latest Federal Circuit decision on this issue is Eaton Corp. v. Rockwell Int'l Corp., 323 F.3d 1332, 66 U.S.P.Q.2d 1271 (2003), a copy of which (from the USPQ) is enclosed as Attachment B. The claim in question is set forth on pages 1273 and 1274 on which Applicants have marked the preamble and the "body". The trial court held that the preamble is not a limitation of the claim, but this was reversed on appeal. The court sums up the status of the law in the paragraph bridging the two columns of page 1276, and concludes:

The method steps of claim 14 thus require the manipulation of particular structures that are identified and described only by the preamble, during a particular sequence of events defined only by the preamble. . . . Claim 14 is an example of "the claim and drafter choos[ing] to use *both* the preamble and the body to define the subject matter of the claimed invention," . . . We therefore conclude that the preamble of claim 14 limits the claimed invention.

66 U.S.P.Q.2d at 1277 (citations omitted).

We have a similar situation in the instant case. Both the preamble and the body of Applicants' claims are necessary in order to define the subject matter of Applicants' claimed invention. Indeed, the method recited in claim 1, which results in at least 10% by volume of airborne respirable particles or droplets not entering a person's or animal's lungs can be understood only in connection with the preamble which specifies that the respirable particles or droplets are produced from an aerosol spray device.

WO '883 says nothing about reducing inhalation of airborne respirable particles or droplets. As noted by the International Examiner in the International Preliminary Examination Report:

The method of this prior art is concerned with improving the quality of air by precipitating dust particles in a room. There is in this document no disclosure of the reduction of the inhalation of aerosol droplets, nor of any operator present within the test space and thus in potential contact with these droplets.

For the foregoing reasons, it is believed that this rejection should be withdrawn.

Rejection over WO '883 and Grawe U.S. Patent No. 5,421,897

The Examiner has maintained her rejection of claims 8, 9 and 13 over WO '883 in view of Grawe U.S. Patent No. 5,421,980 ("Grawe") for reasons set forth in the September 2002 Office Action. In their December 2002 response, Applicants amended claims 1 and 5 – claims on which claims 8, 9 and 13 depend – and argued against the rejection. In responding to Applicants' arguments, the Examiner says:

Applicant argues that WO does not teach a method of precipitating airborne particles. It is argued that the secondary reference, Grawe, does not cure the deficiency of WO and that the novelty of the invention does not lie in the presence of a propellant and surfactant.

Applicant's arguments have been fully considered but they are not persuasive. The arguments regarding WO have been addressed above. It is noted that the applicant has not specifically addressed Grawe.

Applicants again request reconsideration of this rejection.

The primary reference is WO '883 which is discussed above in connection with the rejection of certain claims over this reference alone.

Grawe is a secondary reference and, in originally rejecting these claims, the Examiner said, in the September 2002 Office Action:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a surfactant to WO's emulsion composition since Grawe teaches the use of surfactants to stabilize emulsions from phase separation. Further, Grawe teaches the use of hydrocarbons (butane or propane) for aerosol devices.

In these circumstances, there is no need for Applicants to go into a lengthy discussion of what Grawe discloses, since Applicants are not concerned with encapsulation of toxic particles. The applicable portions of the secondary reference (as summed up by the Examiner) concern (1) the use of surfactants to stabilize emulsions, and (2) the use of butane or propane as propellants for aerosol devices. Neither of these features is at the point of novelty of Applicants' claimed invention. Therefore, since claim 1 would not have been obvious over WO '883 alone, claims 8, 9 and 13 would not have been obvious over WO '883 in view of Grawe. Combining the disclosures of WO '883 and Grawe does not strengthen the Examiner's case. The rejection should be withdrawn.

Rejection over WO '883 and Kulkarni U.S. Patent No. 5,191,149

The Examiner has maintained her rejection of claims 8-10, 13 and 14 over WO '883 in view of Kulkarni U.S. Patent No. 5,191,149 ("Kulkarni") for reasons set forth in the September 2002 Office Action. In their December 2002 response, Applicants amended claims 1 and 5 – claims on which claims 8-10, 13 and 14 depend – and argued against the rejection. In responding to Applicants' argument, the Examiner says:

As set forth above, WO teaches a method of precipitating airborne particles using an emulsion composition in an aerosol device.

WO does not specify the use of a surfactant or a propellant.

Kulkarni teaches the state of the art concerning aerosols. The reference teaches the use of pressurized gas of LPGs to spray liquids, which take the form of a mist of small liquid droplets. Aerosols may be used for numerous products such as cleaners, air fresheners, etc. Kulkarni teaches that aerosols contains surface-active agents, stabilizers, solvents, and may contain as much as 90% propellants. (col. 1, lines 5-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings WO and Kulkarni since Kulkarni teaches the state of art of aerosols and teaches that aerosol forms usually contain surfactants and propellants to function.

Applicants again request reconsideration of this rejection.

The primary reference is WO '883, which is discussed above in connection with the rejection of certain claims over this reference alone. For similar reasons, claims 8-10, 13 and 14 would not have been obvious over WO '883.

Kulkarni is a secondary reference and, in originally rejecting these claims, the Examiner said, in the September 2002 Office Action:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings WO and Kulkarni since Kulkarni teaches the state of art of aerosols and teaches that aerosol forms usually contain surfactants and propellants to function.

In these circumstances, there is no need for Applicants to go into a lengthy discussion of what Kulkarni discloses, since Applicants are not concerned with removing odorous trace compounds from liquid petroleum gases. The applicable portion of the secondary reference (as summed up by the Examiner) is that it had been previously known to incorporate surfactants and propellants into aerosol compositions. This feature is not at the point of novelty of Applicants' claimed invention. Therefore, since claim 1 would not have been obvious over WO '883, claims 8-10, 13 and 14 would not have been obvious over WO '883 in view of Kulkarni. Combining the disclosures of WO '883 and Kulkarni does not strengthen the Examiner's case. The rejection should be withdrawn.

Rejection over WO '883, Kulkarni and Kalat U.S. Patent No. 4,110,427

The Examiner has maintained her rejection of claims 11 and 12 over WO '883 in view of Kulkarni and in further view of Kalat U.S. Patent No. 4,110,427 ("Kalat") for reasons set forth in the September 2002 Office Action. In their December 2002 response, Applicants amended claims 1 and 5 – the claims on which claims 11 and 12 ultimately depend – and argued against the rejection. In responding to Applicants' arguments, the Examiner says:

Applicant argues that WO does not teach instant method. It is argued that although Kalat teaches the surfactants, this is not the point of novelty.

Applicant's arguments have been fully considered but they are not persuasive. The arguments regarding WO have been addressed above. It is noted that the applicant

has not specifically addressed Kalat or the combination; therefore the rejection is maintained.

Applicants once again request reconsideration of this rejection.

The primary reference is WO '883, which is discussed above in connection with the rejection of certain claims over this reference alone. The applicable portions of Kulkarni are discussed above in connection of the rejection of certain claims over WO '883 in view of Kulkarni. For similar reasons, claims 11 and 12 would not have been obvious over WO '883 alone or WO '883 in combination with Kulkarni.

Kalat is an additional secondary reference and, in rejecting these claims, the Examiner said, in the September 2002 Office Action:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use polyglycerol oleate in WO's composition since Kalat teaches a water-based composition and teaches polyglycerol oleate produces strong water-in-propellant emulsion which would be suitable since WO is a water-propellant based composition.

In these circumstances, there is no need for Applicants to go into a lengthy discussion of what Kalat discloses since Applicants are not concerned with an aerosol composition for carrying powdered particulate solids. The applicable portion of this additional secondary reference (as summed up by the Examiner) is that polyglycerol oleate produces a strong water-in-propellant emulsion. This feature is not at the point of novelty of Applicants' claimed invention. Therefore, since claim 1 would not have been obvious over WO '883 alone, and claim 8 (from which claims 11 and 12 depend) would not have been obvious over WO '883 in view of Kulkarni, claims 11 and 12 would not have been obvious WO '883 in view of Kulkarni in further view of Kalat. Combining the disclosures of WO '883, Kulkarni and Kalat does not strengthen the Examiner's case. The rejection should be withdrawn.

Rejection over Malcolm U.S. Patent No. 4,541,844

The Examiner is maintaining her rejection of claims 1-4 as obvious over Malcolm U.S. Patent No. 4,541,844 ("Malcolm") for reasons set forth in the September 2002 Office Action. In their December 2002 response, Applicants argued, *inter alia*, that Applicants' charging system is a passive charging system and that there is no requirement for any agglomeration of particles to occur. In response to Applicants' arguments, the Examiner now says:

Applicant argues that Malcolm teaches a dielectrophoretic process for particle collection. Applicant recognizes that Malcolm teaches a method spraying liquid droplets of with an electrical charge onto particles between .1-20 microns. It is argued that instant invention involves a passive charging system and there is no agglomeration of the particles.

Applicant's arguments have been fully considered but they are not persuasive. As discussed above, the actual steps of the method, i.e. imparting a charge onto airborne particles, are given weight. The examiner points out that Malcolm also sprays and imparts the same charge onto airborne particles of the same size; therefore it is the examiner's position that if the method step is the same, then the prior art will inherently perform the preamble of instant invention. Additionally, the very process of removing particles from the air reads on "reducing the inhalation of particles of airborne particles" since there are less particles in the air to inhale. Secondly, in regards to Malcolm's process requiring voltage, the examiner points out that the instant claim language does not excluded the application of voltage. Further, it is pointed out that the claims only recite a spray device and Malcolm teaches a spray tower; therefore the claims read on the broad recitation. In regards to the agglomeration of the particles, it is pointed out that the claims do not recite the feature that the applicant's arguments are based on, i.e. mutual repulsion, and the claim language does not exclude agglomeration.

Reconsideration of this rejection is requested, particularly in view of the foregoing proposed amendment to claim 1.

One of the points made by the Examiner is that Applicants' claim language does not exclude the application of voltage. In the foregoing amendment, Applicants propose to limit all of the claims in this application to require that the unipolar charge be imparted to the sprayed out droplets solely by interaction between the liquid and the spray device, without any charge being imparted from an internal or external charge inducing device. This limitation is taken from claim 15, which has not been rejected over Malcolm alone.

Malcolm is concerned with removal of small-sized particles, fumes, mists and vapors. The stated objects of the disclosed invention – column 2, line 57, through column 3, line 9 – involves the use of selectively sized and charged liquid droplets to attract uncharged particles borne in a gas stream. Thus, in the Malcolm reference, we have (1) particles to be removed and (2) charged liquid droplets which are attracted to the particles. In Applicants' claimed methods, all we have is (2) the electrically charged droplets. We are not concerned with removing small sized particles that are already present in the air. What Applicants have done is to reduce the inhalation of charged airborne respirable particles/droplets which are coming out of an aerosol spray device. By imparting the required unipolar charge to the droplets – solely by interaction between the droplets and the spray device without producing any internal or external charge-inducing device – Applicants are causing these respirable particles to deposit on various animate surfaces, rather than entering the lungs of the person using the spray device or the lungs of animals or other persons who are present when the spray device is being used. In order to more accurately define their invention, Applicants are also proposing to specify that the liquid droplets, to which the charge is imparted, comes from an aerosol spray device. This limitation is taken from claim 5, which has not been rejected over Malcolm alone.

It is submitted that, with these amendments to claim 1, this rejection should be withdrawn.

Rejection over Malcolm and Inculet U.S. Patent No. 5,400,975

The Examiner has maintained her rejection of claim 5 over Malcolm in view of Inculet U.S. Patent No. 5,400,975 ("Inculet") for reasons set forth in the September 2002 Office Action. In their December 2002 response, Applicants argued against this rejection. In responding to Applicants' arguments, the Examiner says:

Applicant argues that Malcolm teaches a dielectrophoretic process for particle collection. Applicant recognizes that Malcolm teaches a method spraying liquid droplets

of with an electrical charge onto particles between .1-20 microns. It is argued that Malcolm does not teach instant method of reducing particle inhalation. In regards to Inculet, applicant argues that the novelty of the invention is not the use of an aerosol spray, which is taught by Inculet.

Applicant's arguments have been fully considered but they are not persuasive. Arguments pertaining to Malcolm have been addressed and since the specific combination has not been argued, the rejection is maintained.

The foregoing amendment incorporates the limitation of claim 5 into all of the claims in this application. Applicants' request reconsideration of this rejection particularly in view of the foregoing amendment to claim 1 which requires that the unipolar charge be imparted to the liquid droplets solely by interaction between the liquid and the aerosol spray device, without any charge being imparted from an internal or external charge-inducing device. This amendment is proposed primarily for the purpose of overcoming Malcolm, which is a primary reference. However, it also overcomes the applicable portions of Inculet.

Inculet is a secondary reference and, in originally rejecting claim 5, the Examiner said, in the September 2002 Office Action:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an aerosol device with an actuator to dispense Malcolm's liquid droplet. One would be motivated to do so since Inculet teaches aerosol devices are portable and economical and the actuator dispenses an electrostatic charge, which is needed for Malcolm's droplets to collect particulates.

The Examiner characterizes the primary reference as disclosing a method to "collect" particulates". This is a reasonable interpretation of what Malcolm discloses but, as discussed above in connection with rejection of certain claims over Malcolm alone, Applicants claimed methods do not "collect particulates" as disclosed by Malcolm because Applicants are not seeking to remove particulates already present. Applicants are preventing inhalation of small particles and droplets which are coming out of an aerosol spray device. Inculet teaches an aerosol spray device that dispenses electrostatically charged particles. However, the particles are charged by separate charge

inducing means, and not solely – as required in Applicants' claims – by interaction between the liquid and the aerosol device. Thus, Inculet teaches electrostatic charging by corona discharge (column 1, line 34 – prior art), by induction charging (column 1, line 51 – prior art), by application of high voltage (column 2, line 44 – prior art) and by a piezoelectric crystal incorporated in the actuator (column 3, line 23 – disclosed invention). The electrostatic charging methods taught by Inculet involve imparting charge from either an internal or an external charge inducing device. This is contrary to a negative limitation now incorporated into all of Applicants' claims. In these circumstances, the rejection over Malcolm in view of Inculet should be withdrawn.

Rejection over Malcolm, Inculet and Kulkarni

The Examiner has maintained her rejection of claims 6-10 and 13-16 over Malcolm in view of Inculet and in further view of Kulkarni for reasons set forth in the September 2002 Office Action. In their December 2002 response, Applicants amended claims 1 and 5 – claims on which claims 6-10 and 13-16 depend – and argued against the rejection. In responding to Applicants' arguments, the Examiner says:

Applicant argues that Malcolm teaches a dielectrophoretic process for particle collection. Applicant recognizes that Malcolm teaches a method spraying liquid droplets of with an electrical charge onto particles between .1-20 microns. It is argued that Malcolm does not teach instant method of reducing particle inhalation. In regards to Kulkarni, applicant argues that the novelty of the invention is not the use of the composition containing a surfactant.

Applicant's arguments have been fully considered but they are not persuasive. Arguments pertaining to Malcolm have been addressed and since the specific combination has not been argued, the rejection is maintained.

Applicants again request reconsideration of this rejection. The primary reference is Malcolm, which is discussed above in connection with the rejection of certain claims over this reference alone. The secondary reference is Inculet, which is discussed above in connection with the rejection of claim 5 over Malcolm in view of said reference. For

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Filed : June 23, 1999
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similar reasons, claims 6-10 and 13-16 would not have been obvious over Malcolm taken alone or Malcolm in view of Inculet.

Kulkarni is a further secondary reference and, in originally rejecting these claims, the Examiner said in the September 2002 Office Action.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Malcolm, Inculet, and Kulkarni since Kulkarni teaches the state of art of aerosols and teaches that aerosol forms usually contain surfactants and propellants to function.

The applicable portion of the Kulkarni reference (as summed up by the Examiner) is that aerosol formulations usually contain surfactants and propellants to function. This feature is not at the point of novelty of Applicants' claimed invention. Therefore, since claim 1, as now amended, would not have been obvious over Malcolm alone or over Malcolm in view of Inculet, claims 6-10 and 13-16 would not have been obvious over Malcolm in view of Inculet and in further view of Kulkarni. Combining the disclosures of Malcolm, Inculet and Kulkarni does not strengthen the Examiner's case. The rejection should be withdrawn.

CONCLUSION

It is believed that the foregoing amendment puts all remaining claims in this application into condition for allowance. Entry of the amendment is therefore be appropriate. However, even if the Examiner does not regard all of these claims as being allowable, it is nevertheless requested that the amendment be entered since it places this application into better condition for appeal.

Respectfully submitted,

Date: 30 June 03



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